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Calculating the motion and direction of Flux Transfer Events with Cluster

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We use multi-point timing analysis to determine the orientation and motion of flux transfer events (FTEs) detected by the four Cluster spacecraft on the high-latitude dayside and flank magnetopause during 2002 and 2003. During these years, the distances between the Cluster spacecraft were greater than 1000 km, providing the tetrahedral configuration needed to select events and determine velocities. Each velocity and location will be examined in detail and compared to the velocities and locations determined by the predictions of the component and antiparallel reconnection models for event formation, orientation, motion, and acceleration for a wide range of spacecraft locations and solar wind conditions.